REMARKS

New independent claim 43 includes the subject matter of canceled claims 23 and 26. New independent claim 52 includes the subject matter of canceled claims 33 and 36. New dependent claims 44-51 correspond to canceled claims 24, 25 and 27-32. New dependent claims 53-60 correspond to canceled claims 34, 35 and 37-42.

To obviate the §112 rejection regarding specifying the "region of atmosphere" with more particularity, the claims now recite that the beam is transmitted into a region of atmosphere which is located above a hidden source of the acoustic signals to be detected. Reference can be made to Fig. 3 in which a helicopter 110 is the hidden acoustic signal source, and the beam 113 is transmitted into the atmosphere above the hidden source.

On the merits, the new claims are patentably distinguished over the applied art. The device disclosed in Richmond relates to a vibrating platform vibrating target assessment apparatus and not to the detection of acoustic signals, as detailed in our invention. In particular, Richmond discloses assessing a vibrating target from a vibrating platform mounted ladar system by way of deriving a signal representative of the vibrating platform's motion from the ladar's backscatter signal return. A backscatter signal return occurs when the distant target illuminated by ladar energy also encounters moisture and dust and other atmospheric aerosol particles which reside along the path between the ladar system and the distant target, (col. 1, lines 42-49). Richmond does not disclose the detection of movement

of aerosol particles, rather it detects vibration of the platform with respect to what are considered to be stationary particles.

Richmond states that, it is understood that two major sources of vibration are encountered in this system, the first being the flutter, resonance and the other vibrations generated by the platform, and the second is the perhaps smaller amplitude vibration encountered in either a moving or stationary, but engine-running distant target. Clearly, for a meaningful assessment and identification of the target, these two components of vibration must be segregated (col. 4, lines 9-19).

Richmond teaches that it is desirable that the returning reflected energy signal from aerosol particles located between the ladar apparatus and the distant target also be received during the receiver enabled period. *The aerosol particles of greater interest are presumed to reside closer to the ladar apparatus than is the distant target, i.e., aerosol particles return from the first hundred meters of distance along the path are considered to be of primary interest.* It is to be recognized that Richmond contemplates the use of these aerosol particles' return signals to determine the vibrating sensor platform vibration characteristics and that this arrangement inherently contemplates the aerosol particles to be in an effectively quiescent or motionless condition. Additional input signals such as wind velocity are required for the vibration sensing system when this assumption cannot be made (col. 5, lines 13-32).

Richmond goes on to state that if the desired backscatter signal were to be derived from particle returns originating adjacent the distant target, the particle return signal

magnitude would be so low as to require a receiver of unusually large dynamic range capability in order that both the relatively strong signals from a distant target be accepted along with the highly-attenuated aerosol particle signals, (col. 5, lines 52-59).

It is stated that certain embodiments of the system can also be achieved by using the return signal from a known-to-be motionless ground object in order to generate a platform vibration representative return signal. Since the location, size, shape, and other details attending such a ground object (including its motion status) are not predictable however, the herein described aerosol particle return arrangement for the invention is preferred, (col. 6, lines 12-22).

Using the pulse nature of the outgoing laser pulse, range gating can be used to first capture the return signal from the atmospheric aerosols in *the immediate vicinity of the platform*. Range gating at a later time captures the return signal from the distant target of interest. These measurements are herein treated as separate data sets and fast Fourier transformation is performed on each to produce two spectra. The first spectra contains the vibration frequencies of the platform, the second, of both the platform and the target. The first spectra is subtracted from the second and the resutl is a spectra of the target alone, (col. 7, lines 22-33).

An operational system is discussed that may include a library of target signatures and also include degree of match measurement algorithm processing for

automatically performing the target identification function and optionally computing a degree of confidence factor for evaluation of an achieved match, (col. 8, lines 3-10).

The Examiner has cited Zediker '817 and Wootton '668 without detailing specific parts of the documents that may be particularly relevant. Nevertheless, the whole specification of each reference was reviewed, and the applicant has been unable to find any reference to a system having the features now claimed in claims 43 and 52.

Petition is hereby made for a three-month extension of the period to respond to the outstanding Official Action to November 22, 2001. A check in the amount of $920.00, as the Petition fee, is enclosed herewith. If there are any additional charges, or any overpayment, in connection with the filing of the amendment, the Commissioner is hereby authorized to charge any such deficiency, or credit any such overpayment, to Deposit Account No. 11-1145.

Wherefore, a favorable action is earnestly solicited.

Respectfully submitted,

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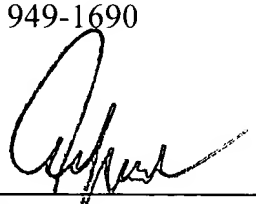

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